WYOMING DEPARTMENT OF ENVIRONMENTAL QUALITY
SOLID AND HAZARDOUS WASTE DIVISION
Operation & Maintenance (Permitted Facilities)

Part 1-Sampling & Analysis Plan (SAP)(Permitted Facilities)

Result	Section	Inspection Item
	10 6(h)(vi)	Does the SAP include provisions for the measurement of static water elevations in each well prior to well purging?
	10 6(h)(iv)	Does the SAP specify the device to be used for measuring water level elevations?
	10 6(h)(iv)	Does the SAP specify the procedure for measuring water levels?
	10 6(h)(iii) and (iv)	Does the SAP provide for depth measurement to standing water and to well bottom to 0.01 feet?
	10 6(h)(iv)	Does the SAP explain whether dedicated or non-dedicated sampling equipment is used and the type of sampling equipment?
	10 6(h)(iv)	Does the SAP describe the procedures for well evacuation?
	10 2(f)(ii)(A)	Does the SAP include detailed operating, calibrating, and maintenance procedures for each sampling device?
	10 6(h)(iv)(A)	Does the SAP provide for dedicated sampling devices for each well or alternately provide for decontamination of sampling devides and the collection of blanks between wells?
	10 6(h)(iv)(A)	Does the SAP provide for the collection and containerization of samples in the order of volatilization potential?
	10 6(h)(iv)(B)	Does the SAP identify preservation methods and sample containers that will be used?
	10 6(h)(iv)(D)	Does the SAP describe procedures for transferring samples to off-site labs?(Chain of Custody procedures)
	10 6(h)(iv)(D)	Does the SAP describe a chain of custody program that include the following: use of sample labels, sample seals, field logbooks, chain-of-custody records, sample analysis request sheets, and lab logbooks?
	10 6(h)(iv)(D)	Does the SAP include provisions for collection of field, trip, and equipment blanks?
	10 2(f)(ii)(A)	Does the SAP include an inventory of sampling equipment and sampling devices used as part of the monitoring program?
	10 2(f)(ii)(c)	Does the SAP include decision criteria to be used to replace or repair sampling equipment and/or montoring wells?

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Part 2-Operating Record & Well Sampling Evaluation (Permitted Facilities)

Result	Section	Inspection Item
	10 5(d)(ii)(F)	Does the Operating Record include annual reports of ground water monitoring results including water level for each well and piezometer in the system?
	10 2(f)(ii)(A),5(d)(ii)(F)	Does the Operating Record include an inventory of all sampling devices and purging equipment in use at the facility?
	10 4(f)(ii)(C), 5(d)(ii)(F)	Does the Operating Record include the decision criteria to be used to replace or repair sampling equipment and/or monitoring wells?
	10 5(d)(ii)(F)	Does the Operating Record include the following records: a) date, exact place and time of sampling/measurement; b) individual(s) who performed sampling/measurements; c)date(s) analyses were performed; d) analytical techniques or methods used; e) results of such analyses?
	10 2(f)(ii)(A),10 5(d)(ii)(F)	Does the Operating Record include calibration and maintenance records?
	10 6(i)(v)	Does the Operating Record include a determination of ground water flow rate and direction(s) in the uppermost aquifer on annual basis?

	10 6(h)(vi)	Did the sampling crew follow these procedures: 1) remove locking and protective cap; 2) determine the static water level; and 3) lower an interface probe into the well to detect immiscible layers?
	10 6(h)(vi)	Did the sampling crew measure static water levels in the well and well depth prior to the sampling event?
	10 6(h)(iv)	Did the sampling crew use a steel tape or electronic device to take depth measurements?
	10 6(h)(iii)	Did the sampling crews record depths to +/- 0.01 feet?
	3 2(e)(iii)(D)	Did the sampling crew lower an interface probe into the well to detect immiscible layers after determining static water level?
	3 2(e)(iii)(D)	If immiscible samples were collected, were they collected prior to well purging?
	3 2(e)(iii)(D)	Did the sampling crew evacuate low yielding wells to dryness prior to sampling? Note: At no time should a well be pumped to dryness if the recharge rate causes the formation water to vigorously cascade deown the sides of the screen and cause an accelerated loss of volatiles. Three casing volumes should be purged at a rate that does not cause recharge water to be excessively agitated as long as the water level does not get below the screen.
	3 2(e)(iii)(D) or Permit Condition	Did the sampling crew evacuate high yielding wells so that at least three casing volumes were removed? It is recommended to use stabilized field parameters instead of 3 casing volumes.
	8 1(b)	Did the sampling crew collect purge water for storage and analysis or for shipment off-site to a RCRA treatment facility?
	10 6(h)(iv)	Were sampling devices constructed of fluorocarbon resins or stainless steel?
	3 2(e)(iii)(D) or Permit Condition	If the sampling crew used non-dedicated samplers, did they disassemble and thoroughly clean the devices between samples?
	3 2(e)(iii)(D) or Permit Condition	If samples were collected for organic analysis, did cleaning procedures include the following steps: 1)non phosphate detergent wash, 2)tap water rinse, 3)pesticide-grade hexane or methanol rinse, 4)acetone rinse, and 5)organic-free reagent water?
	3 2(e)(iii)(D) or Permit Condition	If samples were collected for inorganic analysis, did cleaning procedures include the following steps: 1)nonphosphate detergent wash, 2)tap water rinse, 3)dilute (0.1N) hydrochloric or nitric acid rinse, and 4)reagent water equipment rinse?
	3 2(e)(iii)(D) or Permit Condition	Did the sampling crew take trip blanks, field blanks and equipment blanks?
	3 2(e)(iii)(D) or Permit Condition	If the sampling crew used bailers, was "teflon" coated wire, single strand stainless steel wire or monofilament used to raise and lower the bailer?
	3 2(e)(iii)(D) or Permit Condition	If the sampling crew used bailers, did they lower the bailer slowly to the well? It is preferable to use a bottom emptying device with a valve that allows the sample to slowly drain from the bailer.
	3 2(e)(iii)(D) or Permit Condition	If the sampling crew used bailers/pumps, were the bailer/pump contents transferred to the sample container to minimize agitation and aeration? VOC samples should be collected at a reduced flow rate, tilting the vial, and allowing the water to gently flow down the inside of the vial. Also, it is preferable that VOAs be collected in a liquid stream to prevent loss of volatiles.
	3 2(e)(iii)(D) or Permit Condition	Did the sampling crew take care to avoid placing clean sampling equipment, hoses and lines on the ground or other contaminated surfaces prior to insertion in the well?
	3 2(e)(iii)(D) or Permit Condition	If the sampling crew used dedicated bladder pumps, were the pumps properly operated: -Was the compressed gas from an oilless compresssor certified quality commercial compressed gas cylinder? If not, was a suitable oil removal purification system installed and maintained? -Were samples taken from the bladder pump discharge tube, and not from any purge device discharge tube? -Was the bladder pump flow performance monitored regularly for dropoff in flow rate and discharge volume per cycle?
	3 2(e)(iii)(D) or Permit Condition	Did the sampling crew collect and containerize samples in the order of the volatilization sensitivity of the parameters?
	3 2(e)(iii)(D) or Permit Condition	Did the sampling crew measure the following parameters in the field: pH, temperature, specific conductance? It is also recommended that DO measurements be taken.
	3 2(e)(iii)(D) or Permit Condition	Did the sampling crew sample background wells before sampling downgradient wells?
	3 2(e)(iii)(D) or Permit Condition	Did the sampling crew use fluorocarbon resin or polyethylene containers with polypropylene caps for metals analyses samples and glass bottles with fluorocarbon

		resin-lined caps for organics samples analyses?
	10 5(d)(ii)(F)	Does the operating record include monitoring information concerning the determination of ground water surface elevations?
	3 2(e)(iii)(D) or Permit Condition	Was the pump flow rate during collection of VOA samples, being maintained at a flow rate less than 0.1 L/min?
	3 2(e)(iii)(D) or Permit Condition	Does the sample inlet and outlet tubing remain filled with water to avoid volatiles contacting air (i.e., no bubbles)?
	10 6(h)(iii)	Has it been determined that silt or sediment have entered the well or piezometer and has accumulated to a depth of one foot, or 20% of the screen length, whichever is less or is there evidence the well or piezometer's yield has significantly decreased or the recovery time has significantly increased?
	11 8(b)(i)	Are there any of the following problems present with any wells that may affect well integrity: -cracked, corroded, or degraded? -evidence of frost heaving, subsidence, or collision damage? -evidence of biological fouling? -wells show high levels of pH?

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